

# **An optimum UMTS Modem for multimedia Data, Voice, VoIP in wireless Internet applications.**

## **Abstract of Disclosure**

The present invention encompasses several improved methods and architecture of an UMTS modem for delivering optimum high-speed broadband information, commerce and multimedia entertainment services to mobile users via fixed, wireless and satellite IP networks. The present invention utilizes Turbo Codes baseband processor for optimum performance in decoding received data in limited power and noisy environments. The present invention provides a method for dividing the high-speed bit-stream into multiple slow-speed sub bit-streams, and also dividing the UMTS broadband channel into multiple sub-channels for transmitting each sub bit-stream in the assigned adjacent sub-channels, and the uses of the Orthogonal Frequency Division Multiplexing method implemented by N-point complex FFT/iFFT processor in which it effectively divides the broadband high-speed channel into multiple slow-speed N sub-channels where multiple adjacent channels transmit their carriers' frequency which are orthogonal to each other. Also, when M is smaller than N, channels hopping can be done by re-assigning a bit-stream to another sub-channel slot.

## Figures

Figure 1: A diagram illustrating the structure of a document. It shows a vertical stack of pages, with the top page labeled 'Page 1' and the bottom page labeled 'Page 16'. The pages are connected by a vertical line, and the text 'Page 12 of 16' is visible at the bottom right of the page.